

math 009 online practice final

The equation $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ might be found useful.

1. Solve the inequality $3 - 8x > 15$ and illustrate the solution set on a number line.
2. Solve the inequality: $-7x - 2(3 + 2x) + 7 < -9$
3. What is meant by “the solution set” of the inequality $y > 5 - 2x$? (Yes, you do need to provide a written answer!)
4. Complete the table of values for the function $y = x^2 - 3x - 4$

x	-2	-1	0	1	2	3	4	5
y								

5. Draw the graph of the function $y = x^2 - 3x - 4$ (see question above)
6. Solve: $(3x - 4)(3x + 8) = 0$
7. Solve: $(2x - 5)^2 = 48$
8. Solve: $2x^2 + 11x - 3 = 0$
9. Using your calculator, find an approximation for $\sqrt{37}$ correct to the nearest thousandth.
10. Complete the table of values for the function $y = \sqrt{x}$

x	-1	0	1	4	9	16
y						

11. Draw the graph of the function $y = \sqrt{x}$ (see question above)
12. Simplify: $\sqrt{48} + \sqrt{75} - \sqrt{27}$
13. Multiply: $(x + \sqrt{2})^2$
14. Solve: $\sqrt{3 - 2x} - 11 = -8$
15. Subtract: $(3x^5 - 3x^4 + 7x^2 - 4) - (-8x^4 + 3x^3 - 2x^2 + 7)$
16. Multiply: $(3x^2 + 7x - 6)(3x - 5)$

17. Factor by grouping: $6x^2 + 9x + 10x + 15$
18. Factor: $12x^2 - 14x + 4$
19. Factor: $3x^3 - 9x^2 - 120x$
20. Multiply: $\frac{x^2 + 4x + 3}{x^2 - 9} \cdot \frac{x^2 - 11x + 24}{x^2 + 5x + 4}$
21. Subtract: $\frac{3}{x + 5} - \frac{7}{x - 2}$
22. Draw the graph of the relation $y = 2 - 3x$
23. Draw the graph of the relation $y = \frac{4}{3}x + 2$
24. Draw the graph of $2y + 3x + 8 = 0$
25. Find the slope and y-intercept of the graph of $2y + 3x + 8 = 0$.
26. Find the equation of the straight line which has a slope of -5 and which passes through the point $(6, -4)$.
27. Find the equation of the straight line which passes through the points $(5, 11)$ and $(7, 1)$.
28. Is $x = 3, y = 4$ the solution of the system?
$$\begin{aligned} 4x + 3y &= 24 \\ 2x - 3y &= -6 \end{aligned}$$
29. Solve the system of equations:
$$\begin{aligned} 5x + y &= 7 \\ 3x - 4y &= 18 \end{aligned}$$
30. Solve the system of equations:
$$\begin{aligned} 5x + 2y &= 4 \\ 3x + 4y &= -10 \end{aligned}$$